## **Recovery Plan Action Status**

Plan Name: South Florida Multi-Species Recovery Plan (68 spp.)

Plan Status: Final Plan Date: 18-May-99 Lead Agency: USFWS

Lead Office: South Florida Ecological Services Field Office 562-3909)

Species	Action Priority #	Action #	Action Description	Action Status	Est. Initiation Date	Est. Completion Date	Responsible Parties	Work Type	Labor Type	Action Comments
Key Largo cotton mouse (Peromyscus gossypinus allapaticola)	3	klcm-h1.1.1	Continue Federal acquisition efforts.	Not Started			U.S. Bureau of Land Management, U.S. Department of Agriculture, U.S. Geological Survey, Biological Resources Division, U.S. Federal Emergency Management Agency, U.S. Environmental Protection Agency, U.S. Army Corps of Engineers, Natural Resources Conservation Service , United States Coast Guard , U.S. Air Force, US Forest Service, Crocodile Lake National Wildlife Refuge, Naval Air Station Key West, National Key Deer Refuge		Labor type not yet selected	Action lead(s): FWS
Key Largo cotton mouse (Peromyscus gossypinus allapaticola)	3	klcm-h1.1.2	Support State, local and non- governmental organizationsý acquisition efforts.	Not Started			Florida Fish and Wildlife Conservation Commission, Non- governmental organizations	Work type not yet selected	Labor type not yet selected	Cost dependent upon specific site and amount of land acquired. Action lead(s): FWS
Key Largo cotton mouse (Peromyscus gossypinus allapaticola)	2	klcm-h1.2.1	Protect cotton mice on private lands through acquisition, conservation easements, or agreements, and informing landowners.	Not Started			Florida Department of Environmental Protection, Florida Department of Transportation, South Florida counties	Work type not yet selected	Labor type not yet selected	Cost dependent upon type of protection provided. Action lead(s): FWS

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Key Largo cotton mouse (Peromyscus gossypinus allapaticola)	2	klcm-h1.2.2	Protect cotton mice on public lands.	Not Started			Florida Department of Environmental Protection, Florida Department of Transportation, South Florida counties	Work type not yet selected	Labor type not yet selected	Cost dependent upon type of protection provided. Action lead(s): FWS, FDEP
Key Largo cotton mouse (Peromyscus gossypinus allapaticola)	2	klcm-h1.2.3	Coordinate with Federal, State and Monroe County agencies and private entities to develop management actions to protect cotton mouse habitat.	Not Started			Florida Department of Environmental Protection, Non- governmental organizations	Work type not yet selected	Labor type not yet selected	Action lead(s): FWS
Key Largo cotton mouse (Peromyscus gossypinus allapaticola)	1	klcm-h1.2.4	Avoid clearing or disturbing hammocks.	Not Started			Florida Department of Environmental Protection, Florida Department of Transportation, South Florida counties	Work type not yet selected	Labor type not yet selected	Task currently implemented on public lands and cost is included in responsible agency's budget. Action lead(s): FWS, FDEP
Key Largo cotton mouse (Peromyscus gossypinus allapaticola)	3	klcm-h1.2.5	Restrict access to cotton mouse habitat.	Not Started			Florida Department of Environmental Protection, Florida Fish and Wildlife Conservation Commission, South Florida counties	Work type not yet selected	Labor type not yet selected	Cost is included in responsible agency's budget. Access to Key Largo Hammocks State Botanical Site limited through issuance of backcountry permits. No backcountry permits issued for CLNWR. Action lead(s): FWS, FDEP
Key Largo cotton mouse (Peromyscus gossypinus allapaticola)	3	klcm-h1.2.6	Establish and protect 500-m buffers around Priority 1 habitat.	Not Started			Florida Fish and Wildlife Conservation Commission, South Florida counties	Work type not yet selected	Labor type not yet selected	This habitat delineation is no longer effectual or in use. Action lead(s): FWS
Key Largo cotton mouse (Peromyscus gossypinus allapaticola)	3	klcm-h1.2.7	Prevent fires.	Not Started			Florida Department of Environmental Protection, Florida Department of Transportation, South Florida counties	Work type not yet selected	Labor type not yet selected	Task currently conducted and cost is included in responsible agency's budget. Action lead(s): FWS

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Key Largo cotton mouse (Peromyscus gossypinus allapaticola)	2	klcm-h1.2.8	Eliminate exotic vegetation.	Ongoing Current			Florida Department of Environmental Protection, Florida Department of Transportation, South Florida counties	Work type not yet selected	Labor type not yet selected	Cost is per acre (ex. 3.0/acre); Total cost dependent upon number of acres infested with exotics. Action lead(s): FWS
Key Largo cotton mouse (Peromyscus gossypinus allapaticola)	3	klcm-h2.1	Prepare a hardwood hammock restoration plan for north Key Largo.	Not Started			Florida Fish and Wildlife Conservation Commission, South Florida counties	Work type not yet selected	Labor type not yet selected	Action lead(s): FWS
Key Largo cotton mouse (Peromyscus gossypinus allapaticola)	3	klcm-h2.2	Restore cotton mouse habitat on refuge property.	Ongoing Current			Florida Department of Environmental Protection, South Florida counties	Work type not yet selected	Labor type not yet selected	Cost is per acre (ex. 1.0/acre); Total cost dependent upon number of acres restored. Action lead(s): FWS
Key Largo cotton mouse (Peromyscus gossypinus allapaticola)	3	klcm-h2.3	Restore old CR 905 Road to promote cotton mouse habitat.	Not Started			Florida Department of Environmental Protection, South Florida counties	Work type not yet selected	Labor type not yet selected	Cost is per acre (ex. 1.0/acre); Total cost dependent upon number of acres restored. Action lead(s): FDEP
Key Largo cotton mouse (Peromyscus gossypinus allapaticola)	3	klcm-h2.4	Remove trash and debris.	Not Started			Florida Department of Environmental Protection, Florida Department of Transportation, South Florida counties	Work type not yet selected	Labor type not yet selected	Task currently implemented on right-of-way on CR 905 and Card Sound Road and cost is included in responsible agency's budget. Action lead(s): FWS
Key Largo cotton mouse (Peromyscus gossypinus allapaticola)	3	klcm-h2.5	Improve hydrology and water quality in cotton mouse habitat.	Not Started			U.S. Army Corps of Engineers, Florida Department of Environmental Protection, Water Management Districts	Work type not yet selected	Labor type not yet selected	Dispatch Slough has been restored; no other projects identified. Action lead(s): FDEP
Key Largo cotton mouse (Peromyscus gossypinus allapaticola)	3	klcm-h2.6	Improve habitat by planting or encouraging native plant species.	Ongoing Current			Florida Department of Environmental Protection, Florida Department of Transportation, South Florida counties	Work type not yet selected	Labor type not yet selected	Cost is per acre (ex. 0.5/acre); Total cost dependent upon number of acres improved. Action lead(s): FWS

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Key Largo cotton mouse (Peromyscus gossypinus allapaticola)	3	klcm-h2.7	Create habitat by refilling and recreating areas that have been dredged or altered.	Ongoing Not Current			Florida Department of Environmental Protection, Florida Department of Transportation, South Florida counties	Work type not yet selected	Labor type not yet selected	Cost is per acre (ex. 1.5/acre); Total cost dependent upon number of acres created for habitat. Action lead(s):FWS
Key Largo cotton mouse (Peromyscus gossypinus allapaticola)	3	klcm-h3.1.1	Investigate stable home range and minimum area requirements.	Not Started			Public and private universities	Work type not yet selected	Labor type not yet selected	See Sasso (1999) and Sasso and Gaines (2002). Action lead(s): FWS
Key Largo cotton mouse (Peromyscus gossypinus allapaticola)	3	klcm-h3.1.2	Investigate the effect of habitat change.	Not Started			Public and private universities	Work type not yet selected	Labor type not yet selected	Action lead(s): FWS
Key Largo cotton mouse (Peromyscus gossypinus allapaticola)	3	klcm-h3.2.1	Investigate movement patterns and the spatial use of habitat to identify important core areas and corridors.	Not Started			Public and private universities	Work type not yet selected	Labor type not yet selected	See Sasso (1999) and Sasso and Gaines (2002). Action lead(s): FWS
Key Largo cotton mouse (Peromyscus gossypinus allapaticola)	2	klcm-h3.2.2	Determine if the amount and configuration of habitat is sufficient to support a stable or increasing population of cotton mice.	Not Started			Public and private universities	Work type not yet selected	Labor type not yet selected	Action lead(s): FWS
Key Largo cotton mouse (Peromyscus gossypinus allapaticola)	3	klcm-h4.0	Monitor the status of cotton mouse habitat and examine ecological processes.	Not Started			Public and private universities	Work type not yet selected	Labor type not yet selected	Action lead(s): FWS
Key Largo cotton mouse (Peromyscus gossypinus allapaticola)	3	klcm-h5.0	Increase public awareness of cotton mouse habitat and instill stewardship.	Not Started			Florida Department of Environmental Protection, Non- governmental organizations	Work type not yet selected	Labor type not yet selected	Action lead(s): FWS
Key Largo cotton mouse (Peromyscus gossypinus allapaticola)	2	klcm-s1.1	Conduct presence/absence surveys on north Key Largo.	Partially Complete	FY 2011		Florida Department of Environmental Protection, Florida Fish and Wildlife Conservation Commission, Public and private universities	Work type not yet selected	Labor type not yet selected	Action lead(s): FWS, FDEP

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Key Largo cotton mouse (Peromyscus gossypinus allapaticola)	3	klcm-s1.2	Survey suitable areas in other parts of Key Largo for the presence of cotton mice.	Not Started			Florida Department of Environmental Protection, South Florida counties	Work type not yet selected	Labor type not yet selected	Action lead(s): FWS
Key Largo cotton mouse (Peromyscus gossypinus allapaticola)	2	klcm-s1.3	Determine the status of cotton mouse north of Key Largo.	Ongoing Not Current	FY 2000 - FY 2004		Florida Department of Environmental Protection, Crocodile Lake National Wildlife Refuge, Public and private universities	Research: Demographic Studies, Research: Habitat Status	Labor type not yet selected	Action lead(s): FWS, FDEP. FWS trapped Totten Key in 2004; no KLCM found.
Key Largo cotton mouse (Peromyscus gossypinus allapaticola)	3	klcm-s1.4	Survey cotton mouse habitat.	Ongoing Not Current	FY 2000 - FY 2004		Crocodile Lake National Wildlife Refuge, Public and private universities	Research: Demographic Studies	Contract, Graduate Student	Action lead(s): FWS
Key Largo cotton mouse (Peromyscus gossypinus allapaticola)	3	klcm-s1.5	Survey for the presence/absence of black rats simultaneously with the cotton mice surveys.	Ongoing Current	FY 2006		Crocodile Lake National Wildlife Refuge	Management: Predator and Competitor Control	Labor type not yet selected	Ongoing activity at CLNWR. All captured black rats are removed from klcm habitat. Action lead(s): FWS
Key Largo cotton mouse (Peromyscus gossypinus allapaticola)	3	klcm-s1.6	Maintain and improve the GIS database for cotton mouse information.	Ongoing Current	FY 2000 - FY 2004		Crocodile Lake National Wildlife Refuge	Other: Information and Education	Internal Technical Assistance	Action lead(s): FWS
Key Largo cotton mouse (Peromyscus gossypinus allapaticola)	3	klcm-s2.1	Assign a biologist responsibility for implementing recovery actions for the threatened or endangered species of the upper Florida Keys.	Complete	FY 2000 - FY 2004	FY 2000 - FY 2004	To be determined	Other: Administration	Internal Technical Assistance	FWS biologist assigned to South Florida Ecological Services Office and stationed at Key Largo. Action lead(s): FWS
Key Largo cotton mouse (Peromyscus gossypinus allapaticola)	2	klcm-s2.2	Utilize Federal regulatory mechanisms for protection.	Ongoing Current	Prior to FY 1995		U.S. Bureau of Land Management, U.S. Department of Agriculture, U.S. Geological Survey, Biological Resources Division, U.S. Geological Survey, U.S. Environmental Protection Agency, U.S. Army Corps of Engineers, Natural Resources Conservation Service , United States Coast Guard , U.S. Air Force	Other: Regulations	Labor type not yet selected	Cost included in standard operating procedures of Federal agency's budget. Action lead(s): All Federal agencies

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Key Largo cotton mouse (Peromyscus gossypinus allapaticola)	2	klcm-s2.3	Provide cotton mouse information to State, county, and city agencies, including GIS information regarding the presence of cotton mice, their protection under ESA, and ways to minimize impacts on the mice and their habitat.	Ongoing Current	FY 2000 - FY 2004		To be determined	Other: Information and Education	Internal Technical Assistance	Action lead(s): FWS
Key Largo cotton mouse (Peromyscus gossypinus allapaticola)	3	klcm-s2.4.1	Develop a standard protocol for conducting, monitoring, and evaluating all reintroduction, translocation, and supplementation efforts of cotton mice using the IUCN/SSC Guidelines for Reintroductions.	Not Started	FY 2006		Florida Department of Environmental Protection, South Florida counties	Research: Population Surveys	Contract, Graduate Student	Action lead(s): FWS
Key Largo cotton mouse (Peromyscus gossypinus allapaticola)	3	klcm-s2.4.2	Identify potential release sites.	Not Started			Florida Department of Environmental Protection, South Florida counties	Management: Reintroduction	Labor type not yet selected	Action lead(s): FWS
Key Largo cotton mouse (Peromyscus gossypinus allapaticola)	3	klcm-s2.4.3	Restore or improve habitat where possible to ensure sites are suitable for augmentation/reintr oduction.	Not Started			Crocodile Lake National Wildlife Refuge	Management: Habitat Maintenance and Manipulation	Internal Field Assistance, Internal Technical Assistance	Cost is per acre (ex. 1.0/acre); Total cost dependent upon number of acres restored. Action lead(s):
Key Largo cotton mouse (Peromyscus gossypinus allapaticola)	3	klcm-s2.4.4	Identify suitable release stock.	Not Started			Crocodile Lake National Wildlife Refuge	Management: Captive Standards and Veterinary Care	Internal Technical Assistance	Action lead(s): FWS
Key Largo cotton mouse (Peromyscus gossypinus allapaticola)	3	klcm-s2.4.5	Obtain stock for translocation.	Not Started			Crocodile Lake National Wildlife Refuge	Management: Other	Internal Field Assistance, Internal Technical Assistance	Action lead(s): FWS
Key Largo cotton mouse (Peromyscus gossypinus allapaticola)	3	klcm-s2.4.6	Release cotton mice into new sites.	Not Started			Crocodile Lake National Wildlife Refuge	Management: Reintroduction	Internal Field Assistance, Internal Technical Assistance	Action lead(s): FWS

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Key Largo cotton mouse (Peromyscus gossypinus allapaticola)	3	klcm-s2.4.7	Monitor introduced populations to determine survival, growth, and reproductive success.	Not Started			Crocodile Lake National Wildlife Refuge	Research: Population Assessment	Labor type not yet selected	Action lead(s): FWS
Key Largo cotton mouse (Peromyscus gossypinus allapaticola)	2	klcm-s2.5.1	Remove nuisance predators.	Ongoing Current	FY 2000 - FY 2004		Crocodile Lake National Wildlife Refuge	Management: Predator and Competitor Control	Contract	Feral and free- ranging domestic cats are removed from cotton mouse habitat. Action lead(s): FWS, FDEP
Key Largo cotton mouse (Peromyscus gossypinus allapaticola)	3	klcm-s2.5.2	Minimize the effects of pesticides and other biocides.	Ongoing Current	Prior to FY 1995		Crocodile Lake National Wildlife Refuge	Other: Regulations	Internal Technical Assistance	Unauthorized spraying is prohibited in the range of the klcm on public lands. Herbicides are used to treat exotic plants, following authorized procedures. Action lead(s): FWS
Key Largo cotton mouse (Peromyscus gossypinus allapaticola)	3	klcm-s2.5.4	Reduce the effects of road mortality.	Not Started			Crocodile Lake National Wildlife Refuge	Management: Habitat Maintenance and Manipulation	Labor type not yet selected	Action lead(s): FWS
Key Largo cotton mouse (Peromyscus gossypinus allapaticola)	3	klcm-s2.5.5	Minimize the effects of contaminants.	Not Started	Prior to FY 1995		Crocodile Lake National Wildlife Refuge	Other: Regulations	Labor type not yet selected	Unauthorized spraying is prohibited in the range of the klcm on public lands. Shooting range within CLNWR is closed. Action lead(s): FWS
Key Largo cotton mouse (Peromyscus gossypinus allapaticola)	3	klcm-s3.1	Determine if the total population size is large enough to prevent functional extinction and genetic extinction.	Not Started			Public and private universities	Research: Demographic Studies	Labor type not yet selected	Action lead(s): FWS
Key Largo cotton mouse (Peromyscus gossypinus allapaticola)	3	klcm-s3.2.1	Identify subpopulations vulnerable to extinction.	Not Started	Prior to FY 1995		Crocodile Lake National Wildlife Refuge	Research: Demographic Studies	Labor type not yet selected	Action lead(s): FWS

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Key Largo cotton mouse (Peromyscus gossypinus allapaticola)	3	klcm-s3.2.2	Determine the necessary number of subpopulations and level of exchange that will enable the cotton mouse to persist for 100 years.	Not Started			Crocodile Lake National Wildlife Refuge	Research: Demographic Studies	Labor type not yet selected	Action lead(s): FWS
Key Largo cotton mouse (Peromyscus gossypinus allapaticola)	3	klcm-s3.3	Determine a stable age structure, sex ratio, and group size for the cotton mouse.	Not Started			Crocodile Lake National Wildlife Refuge	Research: Demographic Studies	Labor type not yet selected	Action lead(s): FWS
Key Largo cotton mouse (Peromyscus gossypinus allapaticola)	3	klcm-s3.4	Examine factors that affect the abundance and distribution of the cotton mouse.	Not Started	FY 2006		Crocodile Lake National Wildlife Refuge	Research: Demographic Studies, Research: Habitat Requirements	Graduate Student	Action lead(s): FWS
Key Largo cotton mouse (Peromyscus gossypinus allapaticola)	3	klcm-s4.1	Develop methods to monitor demographic parameters.	Not Started			South Florida counties	Work type not yet selected	Labor type not yet selected	Action lead(s): FWS
Key Largo cotton mouse (Peromyscus gossypinus allapaticola)	2	klcm-s4.2	Conduct long-term monitoring of the cotton mouse.	Ongoing Current			Florida Fish and Wildlife Conservation Commission, Public and private universities	Work type not yet selected	Labor type not yet selected	Action lead(s): FWS, FWC
Key Largo cotton mouse (Peromyscus gossypinus allapaticola)	3	klcm-s4.3	Monitor sex ratios, age class structure, and survivorship.	Not Started			Public and private universities	Work type not yet selected	Labor type not yet selected	Some data on sex and age structure are obtained in monitoring studies. Action lead(s): FWS
Key Largo cotton mouse (Peromyscus gossypinus allapaticola)	3	klcm-s5.1	Prepare informational material for the general public.	Not Started			Florida Department of Environmental Protection, Non- governmental organizations	Work type not yet selected	Labor type not yet selected	Action lead(s): FWS

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Key Largo cotton mouse (Peromyscus gossypinus allapaticola)	1	klcm-s5.2	Develop and implement a cat, black rat, fire ant, and raccoon control program.	Not Started			Florida Department of Environmental Protection, South Florida counties	Work type not yet selected	Labor type not yet selected	A feral and free roaming cat removal program was implemented in 2004 in occupied klcm habitat. All captured black rats are removed from klcm habitat. A fire ant specific pesticide is used regularly along the CR 905 right-of-way. Action lead(s): FWS, FDEP